ebro TFX Series Precision Core Temperature Thermometers

TFX 430 Precision Thermometer
Reference thermometer with exchangeable Pt 100 probe

TFX 430 without probe | TFX 430 + TPX 130 | TFX 430 + TPX 230 | TFX 430 + TPX 330

TFX 430 set

Various probes available (please see page 45).

- MIN/MAX and hold options
- Approximately 5 years battery life time

Technical Data

Measurement range	-100 °C ... +500 °C (-148 °F ... +932 °F)
Measurement accuracy	0.05 °C (-50 °C ... +199.99 °C) ±0.2 ° for the remaining measurement range
Resolution	0.01 °C (-10.00 °C ... +199.99 °C) 0.1 °C for the remaining measurement range
Operating temperature	-20 °C ... +50 °C
Storage temperature	-30 °C ... +70 °C
Sensor	Pt 100
Sampling rate	1 sec to 15 sec
Battery	Lithium battery 3 V / 1 Ah, Type CR 2477
Battery lifetime	Approximately 5 years
Deactivation	Automatic after 2 hours, deactivatable
Dimensions (L x W x H)	109 x 54 x 22 mm
Housing material	ABS
Protection class	IP67
Weight	Approximately 90 g
Factory calibration certificate	-50 °C, 0 °C, +121 °C and +250 °C

Type	Description	Part No.
TFX 430	Thermometer Pt 100 (without probe)	1340-5430A
TFX 430 + TPX 130	Thermometer Pt 100 with probe (needle length = 200 mm, Ø 3 mm, blunt)	1340-5437A
TFX 430 + TPX 230	Thermometer Pt 100 with probe (needle length = 200 mm, Ø 3 mm, pointed)	1340-5438A
TFX 430 + TPX 330	Thermometer Pt 100 with probe (needle length = 190 mm, Ø 8 mm, glazed)	1340-5439A
TFX 430 set	TFX set (Thermometer TFX 430, blunt probe TPX 130, extension cable AX 110, DAkkS calibration, Aluminum case AG130)	1340-5432

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Xylem Analytics Germany Sales GmbH & Co. KG, ebro
Peringerstr. 10 · 85055 Ingolstadt, Germany · Phone +49 841 95478-0 · Fax +49 841 95478-80 · Email: ebro@xyleminc.com · **www.ebro.com**

Accessories for TFX devices

AG 120 Artificial leather case

AG 130 Small case

AG 140 Protective cover for handheld devices, red

AG 150 Plastic bracket ,suitable for 10 mm and 12 mm lamus tripods

AX 110 Extension cable for TFX 430 only

AG 170 Battery exchange set

Type	Description	Part No.
AG 120	Plastic case	1341-0619
AG 130	Transport case	1341-3854
AG 140	Protective cover for handheld devices, red	1340-5005
AG 150	Plastic bracket	1340-5000
AX 110	Extension cable for TFX 430 (1m silicone)	1340-5020
AG 170	Battery-change set (incl. 3V lithium CR 2477 battery, needle, screws, tamping, O-ring, manual)	1100-0106

Alternate probes for TFX 430

Pt 100, 4 conductors class A, Lemo size 1

TPX 130 blunt probe
(Needle length= 200 mm,
Ø 3 mm, stainless steel needle,
up to +400 °C)

TPX 230 pointed probe
(Needle length = 200 mm,
Ø 3 mm, stainless steel needle,
up to +400 °C)

TPX 330 blunt, glass coated probe
(Needle length= 190 mm,
Ø 8 mm, stainless steel needle,
up to +400 °C)

Technical Data

Accuracy	Pt 100, 4 conductors class A, Lemo size 1

Type	Description	Part No.
TPX 130	Blunt probe, needle length = 200 mm, Ø 3 mm	1341-5437
TPX 230	Pointed probe, needle length = 200 mm, Ø 3 mm	1341-5438
TPX 330	Blunt, glass coated probe, blunt, needle length = 190 mm, Ø 8 mm	1341-5439

TFX 422C Conformity Certified Laboratory Thermometer *with fixed Pt 1000 probe*

Due to the new German calibration law which became effective on January 01 2015, we were forced to stop the sales of the TFX 422 Laboratory Thermometer with PTB certification. The so called certification of conformity replaces the calibration by the measurement office. Our new Conformity Certified Laboratory Thermometer TFX 422C is the equivalent successor: same properties, same quality.

The device has been certified together with the EB 4401 food inspection case (*please see page 93*).

- MIN/MAX and hold options
- High precision
- Approximately 5 years battery life time
- Waterproof (IP67)

Technical Data

Measurement range	-50 °C … +200 °C
Operating temperature	-25 °C … +50 °C
Accuracy	± 0,3 °C
Sensor	Pt 1000, stainless steel, Ø 3 mm, L = 120 mm, pointed probe
Cable	Silicone, L = 60 cm or 150 cm, waterproof, oil resistant, food safe
Response time (t_{99})	Approximately 8 Sec. (moving water)
Resolution	0,1 °C
Storage Temperature	-30 °C … +70 °C
Dimensions (L x W x H)	109 x 54 x 22 mm, without probe
Weight	90 g
Housing material	ABS
Protection class	IP67
Battery	Lithium battery (CR 2477), 3V
Battery life time	Up to 5 years, dependent pn the application
Factory calibration certificate	0 °C, +60 °C and +120 °C

Type	Description	Part No.
TFX 422C-60	Conformity Certified Thermometer, with 60 cm cable	1340-5433A
TFX 422C-150	Conformity Certified Thermometer, with 150 cm cable	1340-5434A

TFX-410/420 Series Core Thermometers

TFX 410

TFX 410-1

TFX 420

General Technical Specifications

Accuracy	±0.3 °C
Resolution	0.1 °C
Sensor	Pt 1000
Operating temperature	-25 °C ... +50 °C
Storage temperature	-30 °C ... +70 °C
Battery lifetime	Approximately 5 years
Housing material	ABS
Protection class	Waterproof (IP67)
Weight	Approximately 90 g
Dimensions (L x W x H)	109 x 54 x 22 mm (without probe)
Deactivation	Automatic after 2 hours, deactivatable

TFX 410 Core Thermometer *with fixed Pt 1000 probe*

- High precision
- Approximately 5 years battery life time
- Waterproof (IP67)

Technical Data

Measurement range	-50 °C ... +300 °C (-58 °F ... +572 °F)
Battery	3.0 V lithium, user replaceable
Certificate	3-point factory calibration (-20 °C, 0 °C and +120 °C)

Type	Description	Part No.
TFX 410	Thermometer with TPX 410 probe, pointed, 60 cm silicone cable	1340-5410A
AG 190	Drill for frozen food	1341-3834

TFX 410-1 Core Thermometer without Probe *for various Pt 1000 probes*

Various probes available (see page 48).

- High precision
- Approximately 5 years battery life time

Technical Data

Measurement range	-50 °C ... +300 °C (-58 °F ... +572 °F)
Sensor connection	Lemosa size 0
Battery	3.0 V Lithium, replaceable
Certificate	3-point factory calibration (-20 °C, 0 °C and +120 °C)

Type	Description	Part No.
TFX 410-1	Thermometer without probe	1340-5415A
AG 190	Drill for frozen food	1341-3834
TFX 410-1 & TPX 400	Thermometer with TPX 400 probe	1340-5416
TFX 410-1 & TPX 100	Thermometer with TPX 100 probe	1340-5417
TFX 410-1 & TPX 200	Thermometer with TPX 200 probe	1340-5418
TFX 410-1 & TPX 300	Thermometer with TPX 300 probe	1340-5419

TFX 420 Core Thermometer without Probe *with MIN/MAX and hold options*

Various probes available (see page 48).

- High precision
- Approximately 5 years battery life time

Technical Data

Measurement range	-50 °C ... +400 °C (-58 °F ... +752 °F)
Sensor connection	Lemosa size 0
Battery	3.0 V Lithium, replaceable
Extra functions	Hold, MIN / MAX
Certificate	3-point factory calibration (-20 °C, 0 °C, +120 °C and +250 °C)

Type	Description	Part No.
TFX 420	Thermometer without probe	1340-5425A
AG 190	Drill for frozen food	1341-3834
TFX 420 & TPX 400	Thermometer with TPX 400 probe	1340-5426
TFX 420 & TPX 100	Thermometer with TPX 100 probe	1340-5427
TFX 420 & TPX 200	Thermometer with TPX 200 probe	1340-5428
TFX 420 & TPX 300	Thermometer with TPX 300 probe	1340-5429

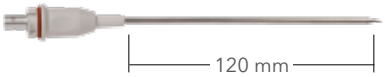
Probes for TFX 410-1 / TFX 420

Pt 1000 Probe (with Lemosa size 0)

The probes of the TFX 410-1 and TFX 420 core thermometers are all changeable – and yet the devices have protection class IP67, i.e. protection against immersion up to 1 m. Even little mishaps like plummeting the device into a bucket of water won´t have consequences. The various probes and cables allow for a use in many different applications, e.g. heating of food (PTFE) or in rough and humid environments (silicone).

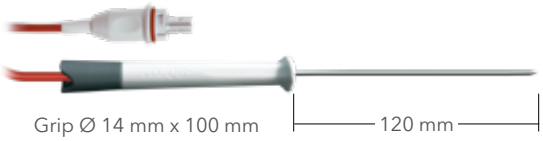
TPX 100 blunt probe
(Needle length = 120 mm, Ø 3 mm, blunt, stainless steel needle, up to +400 °C)

TPX 200 pointed probe
(Needle length= 120 mm, Ø 3 mm, pointed, stainless steel needle, up to +400 °C)

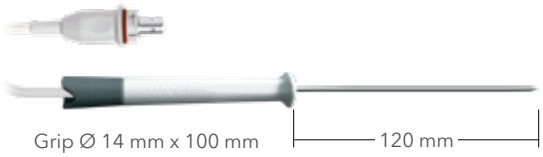


TPX 300 glass-coated probe
(Needle length = 190 mm, Ø 8 mm, glass-coated, stainless steel needle, up to +400 °C)

TPX 400 pointed probe
(Needle length = 120 mm, Ø 3 mm, pointed, with 60 cm silicone cable, stainless steel needle, up to +400 °C)



TPX 440 pointed probe
(Needle length = 120 mm, Ø 3 mm, with 150 cm PTFE cable, stainless steel needle, up to +400 °C)



Technical Data

Accuracy	Exceeds DIN EN 60584, class 1

TF 410 – still working, thanks to IP67

Type	Description	Part No.
TPX 100	Blunt probe, needle length = 120 mm, Ø 3 mm, without cable	1341-5417
TPX 200	Pointed probe, needle length = 120 mm, Ø 3 mm, without cable	1341-5418
TPX 200-20	Pointed probe, needle length = 200 mm, Ø 3 mm, without cable	1341-4182
TPX 200-30	Pointed probe, needle length = 300 mm, Ø 3 mm, without cable	1341-4183
TPX 200-40	Pointed probe, needle length = 400 mm, Ø 3 mm, without cable	1341-4184
TPX 300	Glass-coated probe, needle length = 120 mm, Ø 8 mm, without cable	1341-5419
TPX 400	Pointed probe with 60 cm silicone cable (red) and grip, needle length = 120 mm, Ø 3 mm	1341-5416
TPX 400-40	Pointed probe with 40 cm silicone cable (red) and grip, needle length = 120 mm, Ø 3 mm	1341-4164
TPX 400-150	Pointed probe with 150 cm silicone cable (red) and grip, L = 120 mm, Ø 3 mm	1341-4168
TPX 440	Pointed probe with 150 cm PTFE cable (white) and grip, L = 120 mm, Ø 3mm	1341-4169